

AR201-13736B

RECEIVED  
SEPT NCIC**I. General Information**

02 MAY -9 PM 12: 23

CAS Number: 111-55-7  
 Name: 1,2-Diacetoxyethane  
 1,2-Ethanediol, Diacetate  
 Ethylene Acetate  
 Ethylene Diacetate  
 Ethylene Diethanoate  
 Ethylene Glycol Acetate  
 Ethylene Glycol Diacetate  
 Ethanediol Diacetate  
 Glycol Diacetate

**II. Physical-Chemical Data****A. Melting Point**

<b>Test Substance</b>	
Test substance:	Ethylene Glycol Diacetate
Remarks:	Purity unknown
<b>Method</b>	
Method:	Not Specified
GLP:	Unknown
Year:	Unknown
Remarks:	
<b>Results</b>	
Melting point value:	-31 °C
Remarks:	
<b>Data Quality</b>	
Remarks:	Data obtained from Hazardous Substances Data Bank Number: 430
<b>References</b>	Budavari, S. (Ed.), The Merck Index -Encyclopedia of Chemicals, Drugs and Biologicals. Whitehouse Station, NJ: Merck and Co., Inc 1989, 599.
<b>Other</b>	Last revision date: 19980602

**B. Boiling Point**

<b>Test Substance</b> Test substance: Remarks:	Ethylene Glycol Diacetate Purity unknown
<b>Method</b> Method: GLP: Year: Remarks:	Not specified Unknown Unknown
<b>Results</b> Boiling point value: Pressure: Pressure unit: Decomposition: Remarks:	190-191 °C Not specified
<b>Data Quality</b> Remarks:	Data obtained from Hazardous Substances Data Bank Number: 430
<b>References</b>	Budavari, S. (Ed.). The Merck Index – Encyclopedia of Chemicals, Drugs and Biologicals. Whitehouse Station, NJ: Merck and Co., Inc 1989, 599.
<b>Other</b>	Last revision date: 19980602

**C. Vapor Pressure**

<b>Test Substance</b> Test substance: Remarks:	Ethylene Glycol Diacetate Purity unknown
<b>Method</b> Method: GLP: Year: Remarks:	Not specified Unknown Unknown
<b>Results</b> Vapor pressure value: Temperature: Remarks:	0.077 mmHg 25 °C
<b>Data Quality</b> Remarks:	Data obtained from Hazardous Substances Data Bank Number: 430
<b>References</b>	Daubert, T.E. and Danner, R.P. Physical and Thermodynamic Properties of Pure Chemicals Data Compilation; Washington, D.C.: Taylor & Francis, 1989.
<b>Other</b>	Last revision date: 19980602

**D. Partition Coefficient**

<b>Test Substance</b>	
Test substance:	Ethylene Glycol Diacetate
Remarks:	Purity unknown
<b>Method</b>	
Method:	Not specified
GLP:	Unknown
Year:	Unknown
Remarks:	
<b>Results</b>	
Log P <sub>OW</sub> :	0.10-0.38
Temperature:	Unknown
Remarks:	
<b>Data Quality</b>	
Remarks:	Data obtained from Hazardous Substances Data Bank Number: 430
<b>References</b>	Verschueren, K. Handbook of Environmental Data of Organic Chemicals. 2nd ed. New York, NY: Van Nostrand Reinhold Co., 1983. 696
<b>Other</b>	Last revision date: 19980602

**E. Water Solubility**

<b>Test Substance</b>	
Test substance:	Ethylene Glycol Diacetate
Remarks:	Purity unknown
<b>Method</b>	
Method:	Not specified
GLP:	Unknown
Year:	Unknown
Remarks:	
<b>Results</b>	
Value:	1.78X10+5 mg/l
Temperature:	24.5 °C
Description:	Appreciable (> 100 g/L)
Remarks:	
<b>Data Quality</b>	
Remarks:	Data obtained from Hazardous Substances Data Bank Number: 430
<b>References</b>	Yalkosky, S.H., Dannenfelser, R.M.; The AQUALSOL dATABASE of Aqueous Solubility. 5 <sup>th</sup> ed., Tucson, AZ: Univ. AZ, College of Pharmacy, 1992.
<b>Other</b>	Last revision date: 19980602

### III. Environmental Fate Endpoints

#### A. Photodegradation

<b>Test Substance</b> Test substance: Remarks:	Ethylene Glycol Diacetate
<b>Method</b> Method: Test type: Remarks:	Estimation Atmospheric oxidation
<b>Results</b> Temperature: Hydroxyl radicals reaction OH Rate constant: Half-life Ozone reaction: Remarks:	25 °C $3.7605 \times 10^{-12} \text{ cm}^3/\text{molecule}\cdot\text{sec}$ 2.844 Days (12-hr day; $1.5 \times 10^6 \text{ OH}/\text{cm}^3$ ) No ozone reaction estimation
<b>Conclusions</b>	Material is oxidized by hydroxyl radicals in the atmosphere at a moderate rate.
<b>Data Quality</b> Remarks:	
<b>References</b>	AopWin v 1.88; Meylan, W. (1993). User's Guide for the Estimation Programs Interface (EPI), Version 1.2, Syracuse Research Corporation, Syracuse, New York 13210.
<b>Other</b>	

**B. Stability in Water**

<b>Test Substance</b> Test substance: Remarks:	Ethylene Glycol Diacetate Purity was >99%
<b>Method</b> Method: Test type: GLP: Remarks:	OECD- 111 and EEC Annex V, Part C.7. Abiotic Degradation: Hydrolysis as a Function of pH Yes A preliminary test was performed at 50 °C in which material was dissolved into a pH solution of 4, 7, or 9 at a concentration of 1500 mg/L and % hydrolyzed was determined over time. The rate constants for pH 4 and 7 were derived through Arrhenius relationships in which the logarithm of rate constants at other temperatures (60, 80, and 90 °C) is plotted against the reciprocal of the absolute temperature (K). All studies monitored pH over time.
<b>Results</b> Half-life:  Percent hydrolyzed in 5- days ( 120 hrs) at 50 °C :  Remarks:	pH 4: estimated half life at 25 °C is 33 10 hours pH 7: estimated half life at 25 °C is 549 hours pH9: Not determined, greater than 50% hydrolysis occurred in <2.5 hours  pH 4: 17% pH 7: 36% pH 9: 100% (an average of 77 and 81% was hydrolyzed after 2.4 hours)
<b>Conclusions</b>	Material is rapidly hydrolyzed under basic conditions
<b>Data Quality</b> Remarks:	This study followed OECD guidelines and was conducted under GLP assurances.
<b>References</b>	Abiotic Degradation: Hydrolysis as a Function of pH. HAEL Study# 1999-022 1, Eastman Kodak Company, Rochester, NY. June 28, 2000.
<b>Other</b>	

### C. Biodegradation

<b>Test Substance</b> Test substance: Remarks:	Ethylene Glycol Diacetate Unknown
<b>Method</b> Method: Test type: GLP: Year: Contact time: Inoculum:	Other Hach respirometric and OECD Screening (die-away) tests Unknown Unknown Unknown Sewage inoculum from an unknown source
<b>Results</b> Degradation % at test end: Classification:	Unknown Readily biodegradable
<b>Conclusions</b>	
<b>Data Quality</b> Remarks:	Information was extracted from a peer-reviewed publication referenced within the HSDB. However, there was little documentation in regard to methods with only a final conclusion of "Readily Biodegradable" given.
<b>References</b>	Cain RB; Microbial Degradation of Surfactants and "Builder" Components. FEMS Symp 12 (Microb Degr Xenobiotics Recalcitrant Compds) pp 325-70. 1981.
<b>Other</b>	Readers are encouraged to see robust summaries submitted for Ethylene Glycol for more information.

**D. Transport between Environmental Compartments (Fugacity)**

<b>Test Substance</b> Test substance: Remarks:	Ethylene Glycol Diacetate										
<b>Method</b> Test type: Model used:  Remarks:	Estimation Level III Fugacity Model; EPIWIN:EQC from Syracuse Research Corporation										
<b>Results</b> Model data and results: Estimated distribution and media concentration (levels II/III):  Remarks:	<table><thead><tr><th></th><th>Concentration (%)</th></tr></thead><tbody><tr><td>Air</td><td>1.61</td></tr><tr><td>Water</td><td>47.7</td></tr><tr><td>Soil</td><td>50.6</td></tr><tr><td>Sediment</td><td>0.0595</td></tr></tbody></table> <p>Physical chemical values utilized in this model were default values obtained from the EPI WIN program.</p>		Concentration (%)	Air	1.61	Water	47.7	Soil	50.6	Sediment	0.0595
	Concentration (%)										
Air	1.61										
Water	47.7										
Soil	50.6										
Sediment	0.0595										
<b>Conclusions</b>											
<b>Data Quality</b> Remarks:											
<b>References</b>	Meylan, W. ( 1993). User's Guide for the Estimation Programs Interface (EPI), Version 1.2, Syracuse Research Corporation, Syracuse, New York 132 IO. The Level III model incorporated into EPIWIN is a Syracuse Research Corporation adaptation of the methodology described by Mackay <i>et al.</i> 1996; <i>Environ. Toxicol. Chem.</i> <b>15(9)</b> , 1618- 1626 and 1627- 1637.										
<b>Other</b>											

#### IV. Ecotoxicity

##### A. Acute Toxicity to Fish

<b>Test Substance</b> Test substance: Remarks:	Ethylene Glycol Diacetate Purity was 99.2%
<b>Method</b> Method: Test type: GLP: Year: Species/strain: Analytical monitoring: Exposure period: Remarks:	OECD 203 and EEC/Annex V C. 1. Semi-static Yes 2000 Fathead minnow ( <i>Pimephales promelas</i> ) Yes; Exposure solutions, temperature, pH, dissolved oxygen 96-Hour Biological loading was kept below 1.0 g wet weight per liter of test solution, with 14 fish used per exposure level.
<b>Results</b> Nominal concentration: Measured concentration: Endpoint value: Biological observations:  Statistical methods:  Remarks:	7.5, 15, 30, 60, 120 mg/L 6.1, 13.6, 28.5, 57.4, 115.0 mg/L 96-hour LC <sub>50</sub> = 40.45 mg/L, 24-hour LC <sub>50</sub> = 46.97 At 24-hours, 100% mortality was observed in the 120 mg/L nominal exposure concentration. At 48-hours, 100% mortality was observed in the 60 mg/L nominal concentration. The minnows in the control, and 7.5, 15, and 30 mg/L nominal concentrations exhibited normal behavior and appearance throughout the test and no significant mortality was observed ( $\leq 10\%$ ). The LC <sub>50</sub> values were calculated using the SAS statistical software program EC_LC50.SAS (Ver. 1) The determinations of the LC <sub>50</sub> values were based on the arithmetic average (for replicates A and B) of the geometric means of the 0 to 48-hour test substance analytical results and the 48 to 96-hour test substance analytical results. The tests were performed in glass chromatography jars containing 20 L of exposure solution, with glass lids sealed with Parafilm®. Exposure temperature ranged from 20-21 °C, pH ranged from 7.4 to 8.4, and dissolved oxygen ranged from 6.5 to 9.1 mg/L. Stability determined by analysis of exposure concentrations by GC/FID.
<b>Conclusions</b>	The 96-hour LC <sub>50</sub> value indicates that the test substance would be classified as “harmful to aquatic organisms” according to the European Union’s labeling directive and would correspond to a “moderate concern level” according to the U.S. EPA’s assessment criteria.
<b>Data Quality</b> Reliability: Remarks:	Reliable without restrictions This was a well-documented OECD guideline study conducted under GLP assurances.
<b>References</b>	An Acute Aquatic Effects Test with the Fathead Minnow ( <i>Pimephales promelas</i> ); Environmental Sciences Section, Health and Environment Laboratories, at Eastman Kodak Company, Rochester, NY; HAEL No. 1999-022 1; October 6, 2000.
<b>Other</b>	The 96-h LC <sub>50</sub> value to <i>P. promelas</i> following exposure to ethylene glycol was 49,000 mg/L. The basis of this difference is unknown.

**B. Acute Toxicity to Aquatic Invertebrates**

<b>Test Substance</b> Test substance: Remarks:	Ethylene Glycol Diacetate Purity was 99.2%
<b>Method</b> Method: Test type: GLP: Year: Species/strain: Analytical monitoring: Exposure period: Remarks:	OECD 202 and EEC/Annex V C.2. Acute immobilization, Static Yes 2000 Daphnid/ <i>Daphnia magna</i> Yes; Exposure solutions, temperature, pH, dissolved oxygen 48-Hour
<b>Results</b> Nominal concentration: Measured concentration: Endpoint value: Biological observations:  Statistical methods:  Remarks:	120 mg/L 116.3 mg/L 48-hour EC <sub>50</sub> > 116.3 mg/L The daphnids in the dilution water controls and test substance exposure solutions exhibited normal behavior and appearance throughout the test and no significant mortality was observed ( $\leq 10\%$ ) during the study. NA; No significant differences in immobility were noted between treated and control daphnids. The test substance exposure concentration was based on the arithmetic average (for replicates A and B) of the geometric means of the test substance analytical results at exposure start (time 0) and the test substance analytical results at exposure end (48-hours). Exposure temperature ranged from 20-21 °C, pH ranged from 7.7 to 8.4, and dissolved oxygen ranged from 7.6 to 9.1 mg/L. Stability determined by analysis of exposure concentrations by GC/FID.
<b>Conclusions</b>	The EC <sub>50</sub> value indicates that the test substance would not be classified according to the European Union's labeling directive and would correspond to a "low concern level" according to the U.S. EPA's assessment criteria.
<b>Data Quality</b> Reliability: Remarks:	Reliable without restrictions This was a well-documented OECD guideline study conducted under GLP assurances.
<b>References</b>	An Acute Aquatic Effects Limit Test with the Daphnid ( <i>Daphnia magna</i> ); Environmental Sciences Section, Health and Environment Laboratories, at Eastman Kodak Company, Rochester, NY; HAEL No. 1999-0221, October 9, 2000
<b>Other</b>	

### C. Toxicity to Aquatic Plants

<b>Test Substance</b> Test substance: Remarks:	Ethylene Glycol Diacetate Purity was 99.2%
<b>Method</b> Method: Test type: GLP: Year: Species/strain: Endpoint basis: Exposure period: Analytical procedures:  Remarks:	OECD 201 and EEC/Annex V C.3. Growth inhibition of algae Yes 2001 <i>Selenastrum capricornutum</i> Cell concentrations (biomass) and growth rate 72-hours Temperature, light intensity, rpm, and test substance concentration were assessed at the 0, 24, 48, and 72 hours. The pH was assessed at time 0 and after 72 hours.
<b>Results</b> Nominal concentration: Measured concentration: Endpoint value:  Biological observations: Was control response satisfactory: Statistical methods:  Remarks:	125.0 mg/L 119.86 mg/L (geometric mean over all time points) $E_bC_{50}$ and $E_rC_{50} > 119.86$ mg/L; The 72-hour NOEC was determined to be 119.86 mg/L (highest concentration tested).  None  Yes (control culture concentrations increased by a factor of 72-fold) NOEC value was determined through use of SAS statistical software program AL-ACUTE (Ver. 2.2). The $E_bC_{50}$ and $E_rC_{50}$ were inestimable as greater than 50% inhibition in growth and/or biomass was not achieved in this limit test. A mean illumination of 754 foot-candles was maintained. The mean temperature was 24°C and pH ranged from 7.4 to 7.6. Cultures were oscillated at 100 rpm. Stability determined by analysis of test substance in the test media by GC/FID. No protocol deviations were noted.
<b>Conclusions</b>	The 72-hour $E_bC_{50}$ and $E_rC_{50}$ values indicate that, based on this study, the test substance would not be classified according to the European Union's labeling directive and would correspond to a "low concern level" according to the U.S. EPA's assessment criteria.
<b>Data Quality</b> Reliability: Remarks:	Reliable without restrictions This was a well-documented OECD guideline study conducted under CLP assurances.
<b>References</b>	A Growth Inhibition Limit Test with the Alga, <i>Selenastrum capricornutum</i> ; Health and Environment Laboratories, Eastman Kodak Company, Rochester, NY; Study No. EN-5 12-900134-A; January 30, 2001.
<b>Other</b>	

## V. Toxicological Data

### A. Acute Toxicity

<b>Test Substance</b>	Ethylene Glycol Diacetate
Test substance:	Purity was unknown
Remarks:	
<b>Method</b>	
Method:	Acute lethality; Other
Test type:	LD <sub>50</sub> estimate
GLP:	No (Pre-GLP)
Year:	1941
Species/strain:	Rat/Wistar
Sex:	Male
Animals/sex/dose:	1 O/dose
Vehicle:	Water
Route of exposure:	Oral gavage
Remarks:	It was noted that there were 10 animals per dose.
<b>Results</b>	
Value:	LD <sub>50</sub> = 6.86 g/kg.
Deaths at each dose:	Unknown
Remarks:	
<b>Conclusions</b>	Material would be considered as practically nontoxic.
<b>Data Quality</b>	
Reliability:	Reliable with restrictions
Remarks:	The study was conducted quite some time ago and hence many study details are missing, however basic data are given and results indicate the material is not acutely toxic.
<b>References</b>	Smyth, H.F., Seaton, J., and Fischer, L. (1941). The Single Dose Toxicity of Some Glycols and Derivatives. <i>J. Id. Hyg. Toxicol.</i> <b>23(6)</b> : 259-268.
<b>Other</b>	

**B. Repeated Dose Toxicity**

<b>Test Substance</b> Test substance: Remarks:  <b>Method</b> Method: Test type: GLP: Year: Species/strain: Route of exposure: Duration of test: Dose levels: Sex: Exposure period:  Post-exposure observation period: Remarks:  <b>Results</b> NOAEL (NOEL): Actual doses received: Toxic responses by dose:  Statistical methods: Remarks:  <b>Conclusions</b>   <b>Data Quality</b> Reliability: Remarks:   <b>References</b>   <b>Other</b>	Ethylene Glycol Diacetate Purity was unknown  Other Repeated exposure No 1943 Rat Drinking water Up to 131 days 1, 3, and 5 % Both 10 Females received 5% solutions for up to 37 days while 5 males were exposed to a 1% solution for 110 days, then on Day 111 given a 3% drinking water solution for another 20 days.  None  1% Unknown Rats receiving the 5% solution soon became ill and ate less. One rat died after a week while the last animal was terminated in a moribund state on Day 37. The kidneys of the rat that died after one week were filled with calcium oxalate crystals and were indistinguishable from other test animals that had received ethylene glycol. Animals exposed to a 1% solution grew and appeared normal out to Day 110. Of the animals consuming a 3% test solution for 20 more days, three had markedly enlarged kidneys. The surface was mottled with masses of crystals that extended deep into the cortex. Unknown  It appears that exposure to the diacetate ester of ethylene glycol leads to the formation of calcium oxalate urinary crystals in a manner similar to that of ethylene glycol alone. This strongly suggests the two acetate moieties are cleaved off from the parent glycol.  Reliable with restrictions While the study report lacked a significant amount of information and overall robustness, it nevertheless still indicates that exposure to the diacetate compound induces renal effects similar to that of ethyleneglycol.  Mulinos, M.G., Pomerantz, L., and Lojkin, M. E. (1943). The Metabolism and Toxicology of Ethylene Glycol and Ethylene Glycol Diacetate. <i>Amer. Jour. Pharm.</i> , <b>115</b> : 51-63.  Please see an assessment of this end point in the Ethylene Glycols category of chemicals under the International Council of Chemical Associations (ICCA) High Production Volume (HPV) Initiative.
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<b>Test Substance</b> Test substance: Remarks:	Ethylene Glycol Diacetate Purity was unknown
<b>Method</b> Method: Test type: GLP: Year: Species/strain: Route of exposure: Duration of test: Dose levels: Sex: Exposure period: Post-exposure observation period: Remarks:	Other Repeated exposure No 1939 Rat Oral 7 - 130 days 1 - 5 % Unknown Daily in drinking water None Eleven animals total were used. The report does not indicate exactly how many animals received each dose level.
<b>Results</b> LOAEL:  Actual doses received: Toxic responses by dose:    Statistical Methods: Remarks:	The minimal dose required to produce damage in the kidneys was approximately 6 g/kg received in a 5% concentration for 7 days. Unknown It was noted that 4 animals died between 7 and 114 days, all were noted as having lesions present in the kidneys. Kidneys from 4 of the remaining 7 animals also had lesions. These animals were killed at intervals between Day 15 and 130. Lesions were due to the presence of calcium oxalate crystals. There were no histopathological abnormalities noted in the parathyroid glands. None were noted
<b>Conclusions</b>	It appears that exposure to the diacetate ester of ethylene glycol leads to the formation of calcium oxalate urinary crystals in a manner similar to that of ethylene glycol alone. This strongly suggests the two acetate moieties are cleaved off from the parent glycol.
<b>Data Quality</b> Reliability: Remarks:	Reliable with restrictions While the study report lacked a significant amount of information and overall robustness, its primary value lies in its utility showing that an exposure to ethylene glycol diacetate induces renal effects similar to that seen following exposure to ethylene glycol alone.
<b>References</b>	Kesten, H.D., Mulinos, M.G., and Pomerantz, L. (1939). Pathologic Effects of Certain Glycols and Related Compounds. <i>Arch. Path.</i> , <b>27</b> :447-465.
<b>Other</b>	Please see an assessment of this end point in the Ethylene Glycols category of chemicals under the International Council of Chemical Associations (ICCA) High Production Volume (HPV) Initiative.

### C. Genetic Toxicity • Mutation

<b>Test Substance</b>	
Test substance:	Ethylene Glycol Diacetate
Remarks:	Purity was >99%
<b>Method</b>	
Method:	EEC Annex V Guideline number B. 14, "Other Effects-Mutagenicity <i>Salmonella typhimurium</i> -Reverse Mutation Assay", and Guideline number
	B. 13, Other Effects-Mutagenicity, <i>Escherichia c&amp;</i> -Reverse Mutation Assay"
Test type:	<i>In vitro</i> mutagenicity
GLP:	Yes
Y car:	2000
Species/strain:	<i>Salmonella typhimurium</i> /TA98, 100, 1535, 1537, and <i>Escherichia coli</i> /WP2uvrA(pKM 10 1)
Metabolic activation:	Yes; Aroclor 1254-induced SD rat liver S9
Concentration tested:	Maximum concentration tested was 5000 ug/plate
Remarks:	Positive controls (2-aminoanthracene, 2-nitrofluorene, sodium azide, ICR-19 1, and 4-nitroquinoline-N-oxide) were run concurrently. Water was used as a vehicle and vehicle control.
<b>Results</b>	
Result:	No positive responses were induced in any of the tester strains
Cytotoxic concentration:	>5000 ug/plate (no evidence of cytotoxicity was seen)
Precipitation concentration:	No precipitate was noted in the report.
Genotoxic effects	
With activation:	Negative
Without activation:	Negative
Statistical methods:	A mean and standard deviation are calculated on the number of revertants.
Remarks:	
<b>Conclusions</b>	
	Material was not genotoxic under conditions of this assay.
<b>Data Quality</b>	
Reliability:	Reliable without restrictions
Remarks:	This was a well-documented EEC Annex guideline study conducted under GLP assurances at Covance Laboratories Inc., Vienna, VA.
<b>References</b>	
	Covance study number: 21034-0-409R; February 8, 2000
<b>Other</b>	

#### D. Genetic Toxicity – Chromosomal Aberrations

<b>Test Substance</b>	
Test substance:	Ethylene Glycol Diacetate
Remarks:	Purity was >99%
<b>Method</b>	
Method:	OECD: TG-473
Test type:	<i>In vitro</i> mammalian chromosomal aberrations assay
GLP:	Yes
Year:	2000
Species/strain:	Chinese hamster ovary cells (CHO)
Concentrations tested:	10.2 - 1500 µg/ml (this level meets the 10 mM max. recommended level)
Metabolic Activation:	Yes; Aroclor 1254-induced SD rat liver S9
Remarks:	The positive controls consisted of mitomycin-C and cyclophosphamide. Negative control was the test vehicle water.
<b>Results</b>	
Result:	No significant increases in cells with chromosomal aberrations, polyploidy, or endoreduplication were observed in the analyzed cultures at any concentration.
Cytotoxic concentration:	> 1500 µg/ml (no signs of toxicity were noted)
Precipitation concentration:	No precipitate was observed at the maximum concentration tested.
Genotoxic effects	
With activation:	Negative
Without activation:	Negative
Statistical methods:	Statistical analysis employed a Cochran-Armitage test for linear trends and Fisher's Exact Test to compare the percentage of cells with aberrations.
Remarks:	
<b>Conclusions</b>	
	Material was not genotoxic (did not induce any structural or numerical aberrations) under conditions of this assay.
<b>Data Quality</b>	
Reliability:	Reliable without restrictions
Remarks:	This was a well-documented OECD guideline study conducted under GLP assurances.
<b>References</b>	
	Covance Laboratories Inc., Vienna, VA; Study number: 21034-0-437OECD; March 21, 2000.
<b>Other</b>	

#### E. Developmental Toxicity

Please see an assessment of this end point in the Ethylene Glycols category of chemicals under the International Council of Chemical Associations (ICCA) High Production Volume (HPV) Initiative.

#### F. Toxicity to Reproduction

Please see an assessment of this end point in the Ethylene Glycols category of chemicals under the International Council of Chemical Associations (ICCA) High Production Volume (HPV) Initiative.